

Work Order ID 108037

\*108037\*

Page 1

October-07-13 9:07:06 AM

Item ID: D119-675-011

Accept

\*N900040100\*

Setup Start \*NS1\*

Revision ID:

Stop \*NS2\*

Item Name: Heli-Access-Step™, LH

Start Date: 10/07/13 Start Qty: 1.00 \*1\*

Cust Item ID:

Required Date: 10/07/13 Req'd Qty: 1.00 \*1\*

Customer:

Reference:

Approvals: Process Plan: MLJ Date: 13-10-08 Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start \*NR1\*

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr								
DSI9647	A	<u>Ko</u>	<u>SR</u>					<u>MLJ</u>	<u>13-12-10</u>

100	DOCUMENT CONTROL	0.00							
*100*									
DC	Memo	0.00							
Document Control	Photocopy bluefile & type labels per PPP D119-675-011 CHG005								

DAS  
31  
9-89  
13-12-10

110	Pick Kit	0.00							
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*110*									
Packaging	Memo	0.00							
Packaging									

IX 13-12-6

DAS  
26  
9-89

120	QC4- 100% Inspect kits for completeness	0.00							
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*120*									
QC	Memo	0.00							
Quality Control									

DAS  
31  
9-89  
13-12-10

B107643LH

NCR: Yes / No

## WORK ORDER NON-CONFORMANCE / UPDATE

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width:100%; border: none;"> <tr> <td style="width:25%;">Skid-tube <input type="checkbox"/></td> <td style="width:25%;">Crosstube <input type="checkbox"/></td> <td style="width:25%;">Water Jet <input type="checkbox"/></td> <td style="width:25%;">Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data									
Equip/Tooling									
Operator									
Material									
Setup									
Other									
Process									
Supplier									
Training									
Unapproved									

### FAULT CATEGORY

Landing Gear	General	Other
<input type="checkbox"/> Bending	<input type="checkbox"/> Bend	<input type="checkbox"/> Grain
<input type="checkbox"/> Centre Not Concentric to O/S	<input type="checkbox"/> BOM/Route	<input type="checkbox"/> Hardware
<input type="checkbox"/> Cracks	<input type="checkbox"/> Broken/Damaged	<input type="checkbox"/> Inspection Incomplete
<input type="checkbox"/> Crushed/Crimped	<input type="checkbox"/> Burrs	<input type="checkbox"/> Instructions Incomplete/Unclear
<input type="checkbox"/> Cuffs	<input type="checkbox"/> Contamination	<input type="checkbox"/> Maintenance
<input type="checkbox"/> Heat Treat	<input type="checkbox"/> Countersink	<input type="checkbox"/> Mislabeled
<input type="checkbox"/> Inspection Strip in Tube	<input type="checkbox"/> Cut Too Short	<input type="checkbox"/> Misread
<input type="checkbox"/> Ripples in Bend	<input type="checkbox"/> Drill Holes	<input type="checkbox"/> Offset
<input type="checkbox"/> Torque Waves in Extrusion	<input type="checkbox"/> Drawing	<input type="checkbox"/> Out of Calibration
<input type="checkbox"/> Turning Sequence	<input type="checkbox"/> Finish	<input type="checkbox"/> Out of Sequence
<input type="checkbox"/> Wave/Twist in Tube	<input type="checkbox"/> Folio	<input type="checkbox"/> Outside Dimensions
		<input type="checkbox"/> Ovalized
		<input type="checkbox"/> Over/Under tolerance
		<input type="checkbox"/> Part Incorrect
		<input type="checkbox"/> Part Lost/Missing
		<input type="checkbox"/> Part Moved
		<input type="checkbox"/> Positioned Wrong
		<input type="checkbox"/> Power Loss/Surge
		<input type="checkbox"/> Pressure/Forced
		<input type="checkbox"/> Temperature/Cure
		<input type="checkbox"/> Weld
		<input type="checkbox"/> Wrong Stock Pulled
		<input type="checkbox"/> Other

# Work Order ID 108037

\*108037\*

Page 2

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Item ID: D119-675-011

Accept

\*N900040100\*

Setup Start \*NS1\*

Revision ID:

Stop \*NS2\*

Item Name: Heli-Access-Step™, LH

Start Date: 10/07/13 Start Qty: 1.00 \*1\*

Cust Item ID:

Required Date: 10/07/13 Req'd Qty: 1.00 \*1\*

Customer:

Reference:


Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start \*NR1\*

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130		0.00							
*130*	Packaging								
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPP D119-675-011								
	Location: <u>091A</u>								
140									
*140*	QC21- Final Inspection - Work Order Release	0.00							
QC	Memo	0.00							
Quality Control									

1 13/12/14 DAS 6 9-89 

ML5 13-02-11

MF 13-12-11

NCR: Yes / No

## WORK ORDER NON-CONFORMANCE / UPDATE

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data <input type="checkbox"/>									
Equip/Tooling <input type="checkbox"/>									
Operator <input type="checkbox"/>									
Material <input type="checkbox"/>									
Setup <input type="checkbox"/>									
Other <input type="checkbox"/>									
Process <input type="checkbox"/>									
Supplier <input type="checkbox"/>									
Training <input type="checkbox"/>									
Unapproved <input type="checkbox"/>									

### FAULT CATEGORY

Landing Gear	General	Other	Other
<input type="checkbox"/> Bending	<input type="checkbox"/> Bend	<input type="checkbox"/> Grain	<input type="checkbox"/> Ovalized
<input type="checkbox"/> Centre Not Concentric to O/S	<input type="checkbox"/> BOM/Route	<input type="checkbox"/> Hardware	<input type="checkbox"/> Over/Under tolerance
<input type="checkbox"/> Cracks	<input type="checkbox"/> Broken/Damaged	<input type="checkbox"/> Inspection Incomplete	<input type="checkbox"/> Part Incorrect
<input type="checkbox"/> Crushed/Crimped	<input type="checkbox"/> Burrs	<input type="checkbox"/> Instructions Incomplete/Unclear	<input type="checkbox"/> Part Lost/Missing
<input type="checkbox"/> Cuffs	<input type="checkbox"/> Contamination	<input type="checkbox"/> Maintenance	<input type="checkbox"/> Part Moved
<input type="checkbox"/> Heat Treat	<input type="checkbox"/> Countersink	<input type="checkbox"/> Mislabeled	<input type="checkbox"/> Positioned Wrong
<input type="checkbox"/> Inspection Strip in Tube	<input type="checkbox"/> Cut Too Short	<input type="checkbox"/> Misread	<input type="checkbox"/> Power Loss/Surge
<input type="checkbox"/> Ripples in Bend	<input type="checkbox"/> Drill Holes	<input type="checkbox"/> Offset	<input type="checkbox"/> Pressure/Forced
<input type="checkbox"/> Torque Waves in Extrusion	<input type="checkbox"/> Drawing	<input type="checkbox"/> Out of Calibration	<input type="checkbox"/> Temperature/Cure
<input type="checkbox"/> Turning Sequence	<input type="checkbox"/> Finish	<input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Weld
<input type="checkbox"/> Wave/Twist in Tube	<input type="checkbox"/> Folio	<input type="checkbox"/> Outside Dimensions	<input type="checkbox"/> Wrong Stock Pulled
			<input type="checkbox"/> Other

# Picklist Print

October-07-13 9:07:05 AM

Page 1

Work Order ID: 108037

Parent Item: D119-675-011

Parent Item Name: Heli-Access-Step™, LH

Start Date: 10/07/13

Required Date: 10/07/13

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:D Removed Manufacturing JLM 05-11-01  
 IPP RevE change at rev.b as per ECN1107 DD verified by: IPP REV:F 13.09.03 chg005 /  
 DSI9647 DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
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D2274 Radius Block		Manufactured	No			110	Each	298.0000	8	8			DAS 26 9-89
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Location	Loc Qty	Loc Code
FG	2	
86855	2	
ST007	4	
96580	4	
ST008	292	
100976	1	
102156	245	
65047	4	
86855	4	
92418	7	
95118	4	
95412	6	
99005	21	

DAS  
31  
9-89

D26173 Bushing		Manufactured	No			110	Each	18.0000	4	4			DAS 26 9-89
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Location	Loc Qty	Loc Code
FG	10	
27991	10	
ST013	8	
106147	4	
86394	4	

DAS  
31  
9-89

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data									
Equip/Tooling									
Operator									
Material									
Setup									
Other									
Process									
Supplier									
Training									
Unapproved									

**FAULT CATEGORY**

Landing Gear	General	Other
<input type="checkbox"/> Bending	<input type="checkbox"/> Bend	<input type="checkbox"/> Grain
<input type="checkbox"/> Centre Not Concentric to O/S	<input type="checkbox"/> BOM/Route	<input type="checkbox"/> Hardware
<input type="checkbox"/> Cracks	<input type="checkbox"/> Broken/Damaged	<input type="checkbox"/> Inspection Incomplete
<input type="checkbox"/> Crushed/Crimped	<input type="checkbox"/> Burrs	<input type="checkbox"/> Instructions Incomplete/Unclear
<input type="checkbox"/> Cuffs	<input type="checkbox"/> Contamination	<input type="checkbox"/> Maintenance
<input type="checkbox"/> Heat Treat	<input type="checkbox"/> Countersink	<input type="checkbox"/> Misabeled
<input type="checkbox"/> Inspection Strip in Tube	<input type="checkbox"/> Cut Too Short	<input type="checkbox"/> Misread
<input type="checkbox"/> Ripples in Bend	<input type="checkbox"/> Drill Holes	<input type="checkbox"/> Offset
<input type="checkbox"/> Torque Waves in Extrusion	<input type="checkbox"/> Drawing	<input type="checkbox"/> Out of Calibration
<input type="checkbox"/> Turning Sequence	<input type="checkbox"/> Finish	<input type="checkbox"/> Out of Sequence
<input type="checkbox"/> Wave/Twist in Tube	<input type="checkbox"/> Folio	<input type="checkbox"/> Outside Dimensions
		<input type="checkbox"/> Ovalized
		<input type="checkbox"/> Over/Under tolerance
		<input type="checkbox"/> Part Incorrect
		<input type="checkbox"/> Part Lost/Missing
		<input type="checkbox"/> Part Moved
		<input type="checkbox"/> Positioned Wrong
		<input type="checkbox"/> Power Loss/Surge
		<input type="checkbox"/> Pressure/Forced
		<input type="checkbox"/> Temperature/Cure
		<input type="checkbox"/> Weld
		<input type="checkbox"/> Wrong Stock Pulled
		<input type="checkbox"/> Other

October-07-13 9:07:05 AM

**Required Qty: 1.00**

**DAS**  
**26**  
**9-89**

DAS  
31  
9-89

86395

2

—

**DAS**  
**31**  
**9-89**

100

⑧ B107346

**DAS**  
**26**  
**9-89**

**DAS**  
**31**  
**9-83**

655

**DAS**  
**26**  
**9-89**

84001

18

DAS  
26  
9-89

**DAS**  
**31**  
**9-89**

5

DAS  
31  
9-89

2

**DAS**  
**26**  
**9-89**

106485

19

DA  
26  
9-80

**DAS**  
**31**  
**9-89**

1

106487

35

—

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data									
Equip/Tooling									
Operator									
Material									
Setup									
Other									
Process									
Supplier									
Training									
Unapproved									

**FAULT CATEGORY**

Landing Gear	General	Other	Other
<input type="checkbox"/> Bending	<input type="checkbox"/> Bend	<input type="checkbox"/> Grain	<input type="checkbox"/> Ovalized
<input type="checkbox"/> Centre Not Concentric to O/S	<input type="checkbox"/> BOM/Route	<input type="checkbox"/> Hardware	<input type="checkbox"/> Over/Under tolerance
<input type="checkbox"/> Cracks	<input type="checkbox"/> Broken/Damaged	<input type="checkbox"/> Inspection Incomplete	<input type="checkbox"/> Part Incorrect
<input type="checkbox"/> Crushed/Crimped	<input type="checkbox"/> Burrs	<input type="checkbox"/> Instructions Incomplete/Unclear	<input type="checkbox"/> Part Lost/Missing
<input type="checkbox"/> Cuffs	<input type="checkbox"/> Contamination	<input type="checkbox"/> Maintenance	<input type="checkbox"/> Part Moved
<input type="checkbox"/> Heat Treat	<input type="checkbox"/> Countersink	<input type="checkbox"/> Mislabeled	<input type="checkbox"/> Positioned Wrong
<input type="checkbox"/> Inspection Strip in Tube	<input type="checkbox"/> Cut Too Short	<input type="checkbox"/> Misread	<input type="checkbox"/> Power Loss/Surge
<input type="checkbox"/> Ripples in Bend	<input type="checkbox"/> Drill Holes	<input type="checkbox"/> Offset	<input type="checkbox"/> Pressure/Forced
<input type="checkbox"/> Torque Waves in Extrusion	<input type="checkbox"/> Drawing	<input type="checkbox"/> Out of Calibration	<input type="checkbox"/> Temperature/Cure
<input type="checkbox"/> Turning Sequence	<input type="checkbox"/> Finish	<input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Weld
<input type="checkbox"/> Wave/Twist in Tube	<input type="checkbox"/> Folio	<input type="checkbox"/> Outside Dimensions	<input type="checkbox"/> Wrong Stock Pulled
			<input type="checkbox"/> Other



# Picklist Print

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Page 3

Work Order ID: 108037

Parent Item: D119-675-011

Start Date: 10/07/13

Required Date: 10/07/13

Parent Item Name: Heli-Access-Step™, LH

Start Qty: 1.00

Required Qty: 1.00

**D3043-041** **DAS**  
**31** Manufactured No  
 Step Weldment LH **9-89**  
**AN4-15A**  
 Bolt Purchased No

110 Each 0.0000

**1** 1

107643

**DAS**

**DAS**  
**26**  
**9-89**

110 Each 368.0000

**4** 4

**6**  
**9-89**

**DAS**  
**26**  
**9-89**

Location Loc Qty Loc Code

FP001 4

122141 4

GA 100

120449 100

ST357 9

123900 1

m125709 2

m125750 6

ST514 255

123525 13

m126105 242

Purchased No

110 Each 265.0000

**8** 8

B-12-6

**DAS**  
**26**  
**9-89**

Location Loc Qty Loc Code

FG 5

121541 5

ST357 8

124215 8

ST514 247

125427 200

M126073 47

ST515 5

125396 5

**DAS**  
**31**  
**9-89**

**DAS**  
**31**  
**9-89**

**AN4-16A**  
 BOLT

October-07-13 9:07:05 AM

Shop Packet Print

Page 3

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data									
Equip/Tooling									
Operator									
Material									
Setup									
Other									
Process									
Supplier									
Training									
Unapproved									

**FAULT CATEGORY**

Landing Gear	General	Other
<input type="checkbox"/> Bending	<input type="checkbox"/> Bend	<input type="checkbox"/> Grain
<input type="checkbox"/> Centre Not Concentric to O/S	<input type="checkbox"/> BOM/Route	<input type="checkbox"/> Hardware
<input type="checkbox"/> Cracks	<input type="checkbox"/> Broken/Damaged	<input type="checkbox"/> Inspection Incomplete
<input type="checkbox"/> Crushed/Crimped	<input type="checkbox"/> Burrs	<input type="checkbox"/> Instructions Incomplete/Unclear
<input type="checkbox"/> Cuffs	<input type="checkbox"/> Contamination	<input type="checkbox"/> Maintenance
<input type="checkbox"/> Heat Treat	<input type="checkbox"/> Countersink	<input type="checkbox"/> Mislabeled
<input type="checkbox"/> Inspection Strip in Tube	<input type="checkbox"/> Cut Too Short	<input type="checkbox"/> Misread
<input type="checkbox"/> Ripples in Bend	<input type="checkbox"/> Drill Holes	<input type="checkbox"/> Offset
<input type="checkbox"/> Torque Waves in Extrusion	<input type="checkbox"/> Drawing	<input type="checkbox"/> Out of Calibration
<input type="checkbox"/> Turning Sequence	<input type="checkbox"/> Finish	<input type="checkbox"/> Out of Sequence
<input type="checkbox"/> Wave/Twist in Tube	<input type="checkbox"/> Folio	<input type="checkbox"/> Outside Dimensions
		<input type="checkbox"/> Ovalized
		<input type="checkbox"/> Over/Under tolerance
		<input type="checkbox"/> Part Incorrect
		<input type="checkbox"/> Part Lost/Missing
		<input type="checkbox"/> Part Moved
		<input type="checkbox"/> Positioned Wrong
		<input type="checkbox"/> Power Loss/Surge
		<input type="checkbox"/> Pressure/Forced
		<input type="checkbox"/> Temperature/Cure
		<input type="checkbox"/> Weld
		<input type="checkbox"/> Wrong Stock Pulled
		<input type="checkbox"/> Other

# Picklist Print

October-07-13 9:07:05 AM

Page 4

Work Order ID: 108037

Parent Item: D119-675-011

Parent Item Name: Heli-Access-Step™, LH

Start Date: 10/07/13

Required Date: 10/07/13

Start Qty: 1.00

Required Qty: 1.00

**WASHER**

Purchased No

110

Each

2,697.0000

12

⑫ m. 127255 DAS 26 9-89

DAS  
31  
9-89

## Location

## Loc Qty

## Loc Code

FP001

2

122441

2

ST007

24

121912

24

ST294

117

119097

1

124198

35

124778

81

ST510a

2554

M126221

2554

Purchased No

110

Each

3,079.0000

12

12

13-12-6

DAS 26 9-89

**LOCKNUT**

Locknut

DAS  
31  
9-89

## Location

## Loc Qty

## Loc Code

FP001

50

122452

38

8182

12

ST314

9

m125708

9

st507

33

m126073

33

ST509

2564

m126275

2564

ST510a

258

m126333

258

ST518

165

124231

165

12x

October-07-13 9:07:05 AM

Shop Packet Print

Page 4

NCR: Yes / No

## WORK ORDER NON-CONFORMANCE / UPDATE

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data <input type="checkbox"/>									
Equip/Tooling <input type="checkbox"/>									
Operator <input type="checkbox"/>									
Material <input type="checkbox"/>									
Setup <input type="checkbox"/>									
Other <input type="checkbox"/>									
Process <input type="checkbox"/>									
Supplier <input type="checkbox"/>									
Training <input type="checkbox"/>									
Unapproved <input type="checkbox"/>									

### FAULT CATEGORY

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions
---	---	---

<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge	<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
--	---

# **DART SERVICE INSTRUCTION**

TO AMEND INSTALLATION INSTRUCTIONS IIN-D119-675 REV. B AND  
INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA-D119-675 REV. 2  
REF. FAA STC SR00948SE & EASA STC EASA.IM.R.S.01458

## **1.0 INTRODUCTION:**

The purpose of this Service Instruction is to improve installation of D119-675-011/-012 *Heli-Access-Steps*. This improvement consists of replacing the inboard D3042-1 Clamps and D2182B032 Rubber Cushions with D3041-5/-7 Clamps and D2732-032 Rubber Cushions.

For existing installations (D119-675-011/-012 *Heli-Access-Steps* @ Change 004 or earlier), this service instruction also recommends removal of the D2617-5 Bushings at the aft crosstube position to prevent the bearings in the D3041-1/-3 clamps from being pushed out and makes it permissible for operators to raise the step an additional 2.00 inches (51mm) to provide clearance for the ground handling wheels. Refer to section 2.0 of this Service Instruction.

New installations steps (D119-675-011/-012 *Heli-Access-Steps* @ change 005 or later) will have their parts list and instructions amended accordingly. Refer to section 3.0 of this Service Instruction.

## **2.0 INSTALLATION OF DSI 9647-011 CLAMP REPLACEMENT KIT:**

- 2.1 The DSI 9647-011 Clamp Replacement Kit can be procured from Dart. One kit upgrades one step.
- 2.2 Remove and discard the D3042-1 Clamps, D2182B032 Rubber Cushions and hardware. Replace with the D3041-5/-7 Clamps, D2732-032 Rubber Cushions and hardware as shown in Section B-B and C-C of this Service Instruction.
- 2.3 Tighten clamp bolts. Do not exceed torque of 60 in-lb (6.8 nm) on the nuts.  
**CAUTION:** Over-torquing the nuts could lead to structural damage of the clamps.
- 2.4 Amend weight and balance per section 4.0 of this Service Instruction.

108037 MJS  
13-10-08

A	NEW ISSUE	AJS	13.04.04
REV.	DESCRIPTION	BY	DATE
DESIGN	AJS	<b>DART AEROSPACE USA, INC</b> KENT, WA	
DRAWN	AJS		
CHECKED	J	DRAWING NO.	REV. A
MFG. APPR.	N/A	DSI 9647	SHEET 1 OF 6
APPROVED	[Signature]	TITLE	SCALE
DE APPR.	[Signature]	CLAMP REPLACEMENT	NTS
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### 3.0 INSTALLATION INSTRUCTIONS:

For D119-675-011/-012 *Heli-Access-Steps* @ CHG 005 or later.

Step installations for the A119/AW119 MKII rotorcraft are illustrated in Figure 1 and View A-A, Sections B-B, and C-C of this Service Instruction.

3.1 Remove the existing crosstube-mounted short steps.

- a) For **A119 model** aircraft, remove the Agusta P/N 109-0570-33-101/-103 step by drilling out the 4 attachment rivets per step. Plug holes with rivets and touch up paint per the Aircraft Maintenance Manual as required.
- b) For **AW119 MKII model** aircraft, remove the Agusta P/N M031-01S002-041 step by removing the MS21920-20/-22 clamps. Touch up paint per the Aircraft Maintenance Manual as required.

**NOTE:** It is acceptable to leave the short steps on the landing gear provided they do not interfere with the installation of the Dart step in accordance with the dimensions shown in View A-A of Figure 1.

3.2 Install the D3041-1/-3 Clamps on the step as follows.

- a) For **A119 model** aircraft, install the D3041-1/-3 Clamps per Sections B-B and C-C of this Service Instruction.
- b) For **AW119 MKII model** aircraft, install the D3041-1 Clamps per Sections B-B and C-C of this Service Instruction.

3.3 Present the step to the outboard side of the crosstubes. Propping the step at the appropriate height (see Figure 1) can facilitate installation.

3.4 Install the D2732-032 Rubber Cushions under the D3041-1/-3/-5/-7 Clamps (see Sections B-B and C-C (of this DSI)).

3.5 Find the appropriate step height by locating the step/clamp as shown in View A-A. Locate the forward D3041-1/-3 Clamp 7.8"- 10.4" above the crosstube cuff. Locate the aft D3041-1 Clamp 7.8"-11.6" above the crosstube cuff. The distances given are from the crosstube cuff to the bottom-most clamp.

3.6 Tighten the clamp bolts. Do not exceed torque of 60 in-lb (6.8 Nm) on the nuts.

**CAUTION:** Over-torquing the nuts could lead to structural damage of the clamps.

3.7 Amend weight and balance per section 4.0 of this Service Instruction.

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MFG. APPR.	N/A	DSI 9647	SHEET 2 OF 6
APPROVED	<i>[Signature]</i>	TITLE	SCALE
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#### 4.0 WEIGHT AND BALANCE:

Use the following Weight and Balance for D119-675-011/-012 @ CHG 005 or later.

Installation	Weight	LATERAL		LONGITUDINAL	
		Arm	Moment	Arm	Moment
D119-675-011	11.8 lb	-32.4 in	-382 in-lb	121.3 in	1431 in-lb
Heli-Access-Step™, LH	5.4 kg	-1.28 m	-6.9 m-kG	3.08 m	16.6 m-kG
D119-675-012	11.8 lb	+32.4 in	+382 in-lb	121.3 in	1431 in-lb
Heli-Access-Step™, RH	5.4 kg	+1.28 m	+6.9 m-kG	3.08 m	16.6 m-kG

#### 5.0 PARTS LISTS:

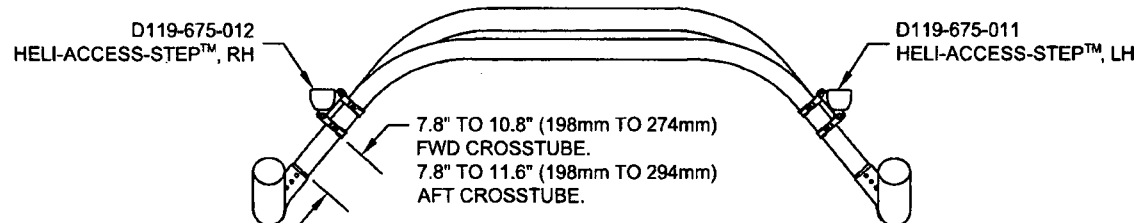
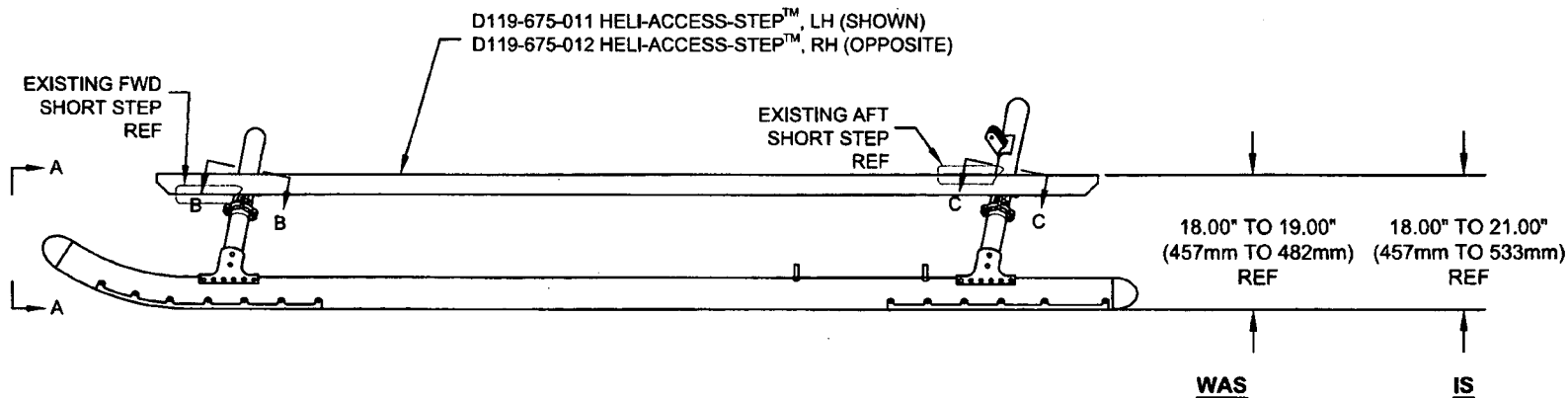
QTY -011	Part Number	Description
X	DSI 9647-011	CLAMP REPLACEMENT KIT
4	D2732-032	RUBBER CUSHION
4	D3041-5	CLAMP
2	D3041-7	CLAMP
8	AN4-16A	BOLT
8	AN960JD416	WASHER
8	MS21042L4	BOLT

Use the following Parts List for D119-675-011/-012 @ CHG 005 or later.

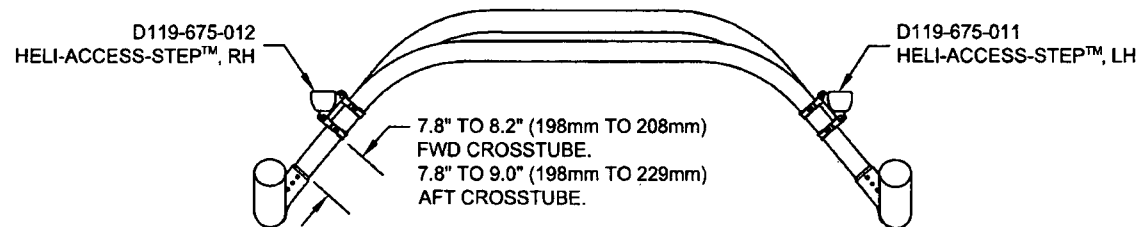
Qty -011	Qty -012	Part Number	Description
X		D119-675-011	HELI-ACCESS-STEP™, LH
	X	D119-675-012	HELI-ACCESS-STEP™, RH
8	8	D2274	RADIUS BLOCK
4	4	D2617-3	BUSHING
4	4	D2617-5	BUSHING
8	8	D2732-032	RUBBER CUSHION
4	4	D3041-1	CLAMP
2	2	D3041-3	CLAMP
4	4	D3041-5	CLAMP
2	2	D3041-7	CLAMP
1		D3043-041	STEP WELDMENT LH
	1	D3043-042	STEP WELDMENT RH
4	4	AN4-15A	BOLT
8	8	AN4-16A	BOLT
12	12	AN960JD416	WASHER
12	12	MS21042L4	NUT (OR MS21042-4)

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DRAWN	AJS		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. A
MFG. APPR.	N/A	DSI 9647	SHEET 3 OF 6
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	CLAMP REPLACEMENT	NTS
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VIEW A-A



VIEW A-A

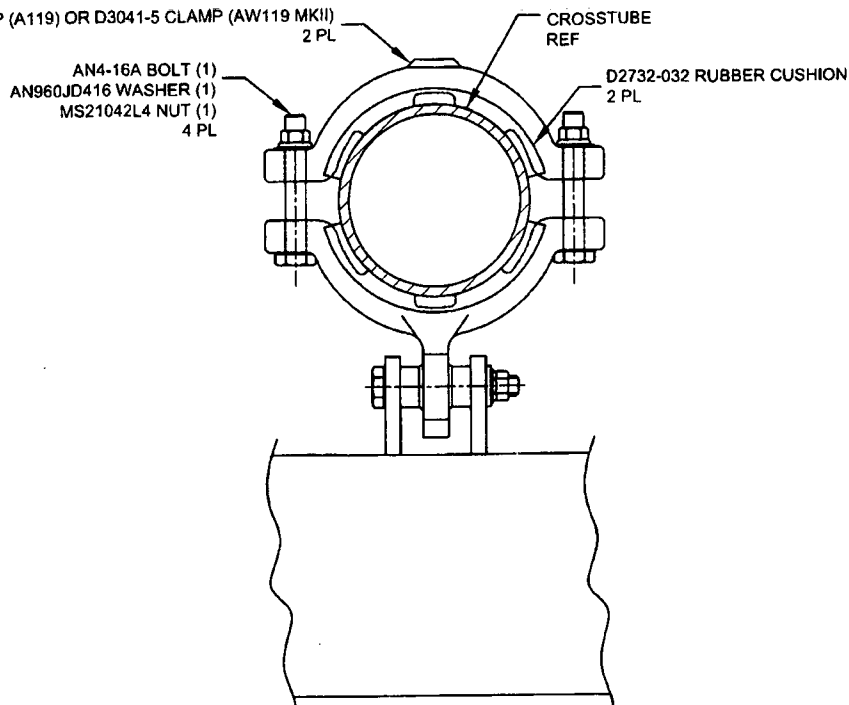
FIGURE 1 - D119-675-011/-012 HELI-ACCESS-STEP™

DESIGN	AJS	<b>DART AEROSPACE USA, INC</b> KENT, WA DRAWING NO. DSI 9647 REV. A SHEET 4 OF 6 SCALE NTS CLAMP REPLACEMENT COPYRIGHT © 2013 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS COVENANT THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.
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CHECKED		
MFG. APPR.	N/A	
APPROVED		
DE APPR.		
DATE	13.04.04	

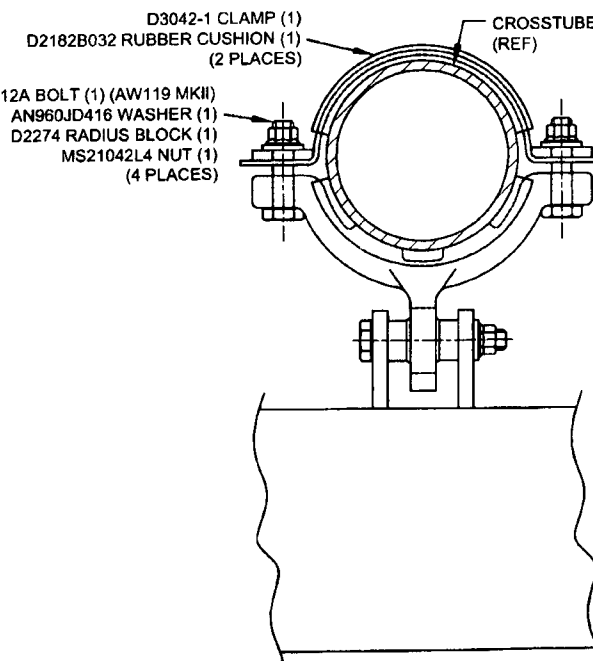
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**IS:**  
**SECTION B-B**  
 FWD CROSSTUBE,  
 VIEW ROTATED



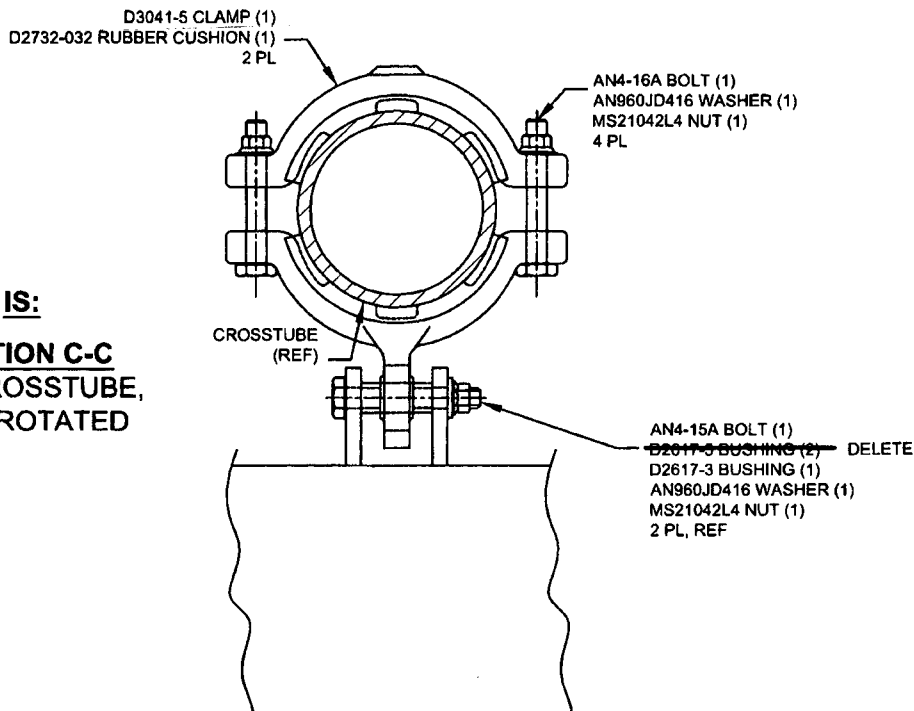
**WAS:**  
**SECTION B-B**  
 FWD CROSSTUBE,  
 VIEW ROTATED



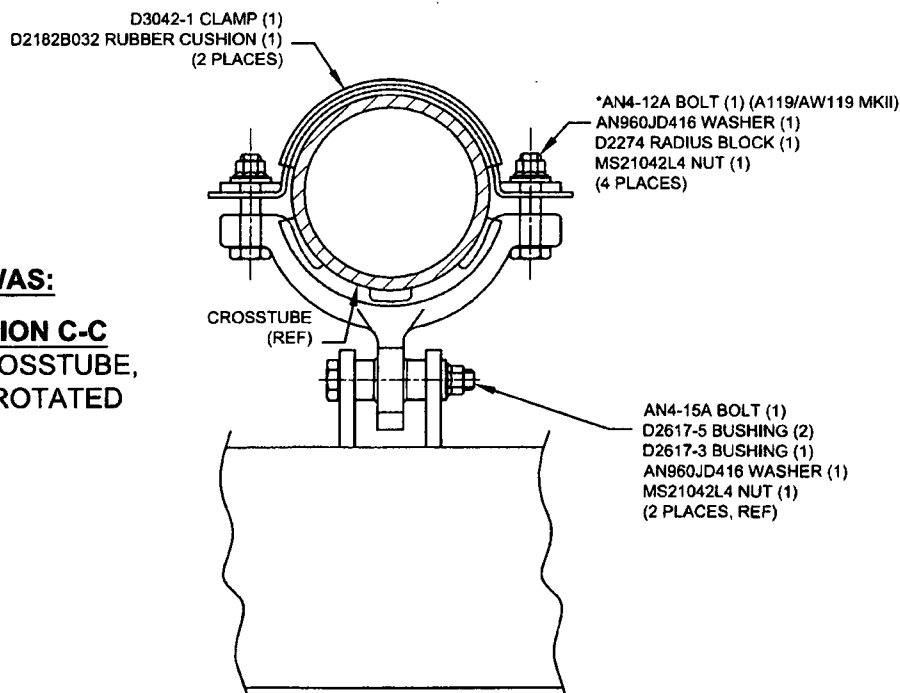
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DRAWN	AJS		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. A
MFG. APPR.	N/A	DSI 9647	SHEET 5 OF 6
APPROVED	<i>[Signature]</i>	TITLE	SCALE
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**IS:**  
**SECTION C-C**  
**AFT CROSSTUBE,**  
**VIEW ROTATED**



**WAS:**  
**SECTION C-C**  
**AFT CROSSTUBE,**  
**VIEW ROTATED**



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APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	CLAMP REPLACEMENT	NTS
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108037

INTERVAL ONLY

#### 4.0 WEIGHT AND BALANCE:

Use the following Weight and Balance for D119-675-011/-012 @ CHG 005 or later.

Installation	Weight	LATERAL		LONGITUDINAL	
		Arm	Moment	Arm	Moment
D119-675-011	11.8 lb	-32.4 in	-382 in-lb	121.3 in	1431 in-lb
Heli-Access-Step™, LH	5.4 kg	-1.28 m	-6.9 m-kG	3.08 m	16.6 m-kG
D119-675-012	11.8 lb	+32.4 in	+382 in-lb	121.3 in	1431 in-lb
Heli-Access-Step™, RH	5.4 kg	+1.28 m	+6.9 m-kG	3.08 m	16.6 m-kG

#### 5.0 PARTS LISTS:

QTY -011	Part Number	Description
X	DSI 9647-011	CLAMP REPLACEMENT KIT
4	D2732-032	RUBBER CUSHION
4	D3041-5	CLAMP
2	D3041-7	CLAMP
8	AN4-16A	BOLT
8	AN960JD416	WASHER
8	MS21042L4	BOLT

Use the following Parts List for D119-675-011/-012 @ CHG 005 or later.

Qty -011	Qty -012	Part Number	Description
X		D119-675-011	HELI-ACCESS-STEP™, LH
	X	D119-675-012	HELI-ACCESS-STEP™, RH
8	8	D2274	RADIUS BLOCK
4	4	D2617-3	BUSHING
4	4	D2617-5	BUSHING
8	8	D2732-032	RUBBER CUSHION
4	4	D3041-1	CLAMP
2	2	D3041-3	CLAMP
4	4	D3041-5	CLAMP
2	2	D3041-7	CLAMP
1	1	D3043-041	STEP WELDMENT LH
	1	D3043-042	STEP WELDMENT RH
4	4	AN4-15A	BOLT
8	8	AN4-16A	BOLT
12	12	AN960JD416	WASHER
12	12	MS21042L4	NUT (OR MS21042-4)

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MFG. APPR.	N/A	DSI 9647	SHEET 3 OF 6
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DE APPR.	TH	CLAMP REPLACEMENT	NTS
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